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AUTHOR Halloran, Margaret
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ABSTRACT

In the past, educators reduced class size to obtain significant increases in academic achievement. However, research comparing small and large classes found very little or no significant difference in students' academic achievement. Presently, the National Center for Education projects an increase in teaching jobs and a slight improvement in the teacher/pupil ratio by 1992. Findings on the effect of the projected smaller ratio on academic achievement are inconclusive. In future research, many variables must be considered and an agreeable definition of class size should be sought. Future research should also concentrate on studies focused at the same grade level and including teachers with a similar level of competence. (RH)

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Class Size and Academic Achievement

by
Margaret Halloran

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Many public schools are questioning the need to reduce class size to improve academic achievement. In most school districts, class size is determined by dividing the number of pupils in a school building by the number of full time teachers who work in that building . The teachers would like to see classes smaller because work would be easier, atmosphere would be more pleasant, and the students would learn better. Parents are concerned about scores on academic achievement tests at all grade levels. The U.S. Department of Education received a report from the National Commission on Excellence in Education (1983) which stated the facts that precipitated these concerns. Over 23 million adults are functionally illiterate. Gifted children are not achieving academically compared to their ability. Colleges have increased their remedial mathematics courses by 72 percent in a five year period. The College Board's Scholastic Aptitude Tests (SAT) have shown verbal and math scores decreasing. Parents believe these problems can be overcome by decreasing class size. Administrators have been trying to justify the cost of reducing class for these reasons too. Research supporting smaller class size to improve academic achievement has been inconclusive.

For more than fifty years researchers have been studying classroom size and its effect on academic achievement. Almost universally it is accepted that smaller classes mean better achievement test scores. Horn (1937) concluded in 1937 that class size is not an important factor in determining achievement as it is usually measured. At that time the average class size was 29 students per teacher according to the graph of pupil-teacher ratio in Glass (1982).

Another research study of this decade is that of Whitney and Witley (1932). The New Stanford Achievement Test was used to compare groups of 20 and 40 pupils to evaluate the learning of each group. The published findings do not support Horn's conclusion. The achievement tests showed nearly 80 percent of the comparison of small and large classes favored the small classes.

The effect of class size on academic achievement was not researched much in the 1940's. The 29 pupils per teacher ratio appears to be constant during World War II and after (Glass, 1983).

A resurgence of interest in class size and pupil achievement was shown in 1950, when the ratio was about 26 pupils per teacher. Although classes were smaller than the preceding decades, Spitzer (1954) thought it necessary to research class size and pupil achievement. His theory like other reseachers

was that the teacher's ability to give more time to individual pupils would result in superior achievement by the pupils. Morale and routine teaching activities were also considered. The study was conducted with third and sixth graders. Large classes were defined as 30 or more and small classes as 26 or fewer. Four tests of achievement were given to all pupils in the study. He concluded that the difference was so small as to be of no practical significance.

The question of effectiveness of instruction in a larger or smaller class was again explored by Feldhausen (1963). This report directed its attention to the technological innovations of the early 60's. Television and teaching machines were an example of the technology teachers could use to facilitate instruction to larger number of students. The experiment involved 22 students from a large class of 72 students and 22 students from a small class of 28 students. The college students who were in an educational psychology class were given a comprehensive test on concepts and principles if psychology. The results support the conclusion made by Spitzer's (1955) study that there is no significant difference in the amount learned from the students in the large groups from the amount learned by the students in the small group.

The historical trend of smaller class sizes is shown graphically in Glass (1982). From 1880 to 1980 class size has been reduced from 35 pupils per teacher to a ratio of 21 pupils per teacher. As time progresses the figures are reduced because

more and more specialists who do not have classes are added to the figures. Glass notes that class size is the center of nearly "1000" controversies. If you increase class size the number of teachers increase, conversely, increase in the number of teachers would result in decreased class size.

Glass (1982) and his associates concluded from their mega analysis of class size that it makes no significant difference on achievement. He said class size makes a difference in classroom manageability and teacher morale.

Cahen and Filby (1979) who are associates of Glass have pointed out that reduction in class size is no guarantee that the quality of instruction will be increased. A poor teacher with many will be a poor teacher with a few. The conclusion made by Glass (1982) and his associates is that class size will have no magical or unmediated affect on student achievement.

Another conclusion Cahen and Filby (1979) reached was that on the average, student achievement increases as class size is reduced. Reduction to 15 students or fewer shows greater advantages for increasing academic achievement. Reduction of class size from 28 to 25 students would make only a small difference in academic achievement.

Cahen and Filby (1983) researched the question of class size further. The school cites used in this study were located in Virginia and California. Again, the results showed that "in

spite of diference in context, the response to the class size reduction was very small."

Research further shows as we progress into the 1980's, class size is being reduced further. In a Statistical Compendium from the National Center for Educational Statistics, teacher-pupil ratio for Illinois is 18.6, for Indiana 19.9, for Iowa 16.3, and for Wisconsin 17.1 respectively. Student performance on the American College Test (ACT) 1982 rark these states as follows: Illinois 16th, Indiana ranked 17th based on the Scholastic Aptitude Test, Iowa 2nd, and Wisconsin 1st. The two states with the lowest pupil teacher ratio ranked first and second on the American College Test (ACT).

Educational Research Services (1980) which is used by administrators who sent in the above statistics recently critiqued the findings of Glass and his associates. The Research Service thought the conclusions from the study showed classes of 20 to 40 pupils made little difference in school achievement. Educational Reasearch argued that the conclusions from the graph would have administrators believe classes reduced to under 20 would achieve better while classes that increased from 20 to 40 would show no noticeable effect on achievement. Also, the Service noted some of the conclusions made by Glass and his associates are either misleading or unjustified.

The Phi Delta Kappan for 1980 and 1981 printed Glass's rebuttal to the Educational Reasearch Services. It is as follows:

> It is counsel that if listened to would stop decisions about class-size and maintain the status-quo in the face of a long historical trend toward smaller pupil/teacher ratios.(p.246).

In the past having smaller classes to obtain significantly different academic achievement was the trend. Research findings show there is very little or no significant difference between smaller and larger classes academically. For the future the National Center for Education (1984) projects an increase in teaching jobs and a slight improvement in teacher/pupil ratios by 1992. The findings are inconclusive as to the effect this smaller teacher/pupil ratio will have on academic achievement. The ratio continues to change as more specialists are included in the figure for number of teachers. Many other variables as they relate to class size and academic achievement must be considered in future research. More research must be directed toward an agreeable definition of class size. Future research should also concentrate on studies at the same grade level with similarly competent teachers.

REFERENCES

Cahen,L.S. and Filby,N.N., "The Class Size Achievement Issue: New Evidence and a Research Plan." Phi Delta Kappan, 60:492-497-568, March 1979.

Cahen, L.S., Filby, N.N., McCutheon, G. and Kyle, D.W., "Class Size and Instruction. New York: Longman, 1983.

Educational Research Services, "Class Size Research: A Critique of Recent Meta-Analysis." Phi Delta Kappan, 62:237-41 December,1980.

Feldhausen, J.F., "The Effects of Small and Large Group Instruction on Learning of Subject Matter, Attitudes and Interest." Journal of Psychology, 55:357-361. 1963.

Glass, Gene V., Cahen, Leonard S. , Smith, Mary Lee, and Filby, N.N., School Class Size, Beverly Hills:Sage Publications, 1982.

Glass, Gene V., "On Criticism of Our Class Size/Student Achievement Research." Phi Delta Kappan 62:242-246, December, 1981.

Horn, Ernest, "Methods of Instruction in the Social Studies." edited by H. F. Spitzer, Elementary School Journal 55:82-86, 1954.

Nohrt, Roy C., "Public Elementary and Secondary Education in the United States 1980-1981: A Statistical Compendium." National Center for Education Statistics, March 1983.

Spitzer, H. F. "Class Size and Pupil Achievement in Elementary Schools." Elementary School Journal, 1954 , 55:82-86.

Thompson, Roger,"Status of the Schools," Editorial Research Report, 11:626, August, 1984.

United States Department of Education, " A Nation at Risk: The Imperative for Educational Reform. " A report to the nation and the Secretary of Education, National Council Commission on Excellence in Education. Washington , D. C., April, 1983.

Whitney, L.and Wiley, G.G.,"Advantages of Small Classes." edited by Gene Glass, School Class Size.Beverly Hills: Sage Publishing, 1982.